

“New Horizons for Early Life Exposome Research”

Scientific Symposium Barcelona – 30-31 October 2017

Organising committee:

- HELIX: Martine Vrijheid, Lea Maitre, Diana van Gent, Iolanda Molina (ISGlobal), Cathrine Thomsen (NIPH Norway), Muireann Coen (Imperial College London), John Wright (Bradford), Rémy Slama (Inserm, Grenoble), Peter van den Hazel (VGGM, Netherlands)
- EXPOSOMICS: Paolo Vineis (ICL), Roel Vermeulen (IRAS, Utrecht)

Programme

Day 1

9.00-9.15 Welcome

9.15-11.00 Session 1. Setting the scene - the Exposome projects (chair: Mark Nieuwenhuijsen) – 10 minutes each

- The global, societal and policy challenge - Manolis Kogevinas
- Research on Environment and Health and the Exposome – EU Perspectives - Tuomo Karjalainen
- What have we learnt in HELIX and why does it matter? Martine Vrijheid
- What have we learnt in Exposomics and why does it matter? Paolo Vineis
- What have we learnt in HEALS and why does it matter? Spyros Karakitsios
- Update on US exposome efforts – Hercules. Gary Miller
- Update on US exposome efforts – NIEHS. Gwen Collman
- Discussion

11.00-11.30 Coffee

11.30-13.00 Session 2. Describing the early life Exposome and its determinants and variability across Europe (chair: Martine Vrijheid) – part 1

- **Keynote:** The In-utero and early life chemical exposome – Cathrine Thomsen (NIPH) (30 mins)
- Estimating the early-life exposure to two perfluorinated compounds (PFOS and PFOA) using PBPK modeling and biomarker measurements – Celine Brochot (10 mins)
- Diet as a source of exposure to environmental contaminants for pregnant women and children - Eleni Papadopoulou (10 mins)

- **Keynote:** The urban exposome, determinants & variability – Mark Nieuwenhuijsen (ISGlobal) (30 mins)
- ExpoApp: the integrative system to assess the external exposome & Personal exposure to the external exposome in pregnancy and childhood in Europe – David Donaire (10 mins)

13.00-14.00 Lunch & Posters

14.00-14.30 Session 2. Describing the early life Exposome and its determinants and variability across Europe (chair: Martine Vrijheid) – part 2

- Early life exposome patterns in 6 countries – Xavier Basagaña (10 mins)
- Discussion of summary statement: “achievements and challenges” (20 mins)

14.30-15.45 Session 3. Omics signatures related to multiple early-life environmental exposures (chair: Muireann Coen) Part 1

- **Keynote** – Cataloguing omics signatures of many environmental exposures – HELIX results (Mariona Bustamente / Lea Maitre ISGlobal) (30 mins)
- The urinary and serum metabolome in children from six European populations – Alexandros Siskos (10 mins)
- Epigenetic marks of early life exposure to particulate matter – Michelle Plusquin (10 mins)
- Smoking and methylation – Marta Vives (10 mins)
- The exposome and telomere length – Diana Clemente (10 mins)

15.45-16.15 Coffee

16.15-17.30 Session 3. Omics signatures related to multiple early life environmental exposures (chair: Hector Keun) Part 2

- **Keynote** - Biostatistical/bioinformatics challenges – Marc Chadeau (ICL) (30 mins)
- Human epigenome, transcriptome, metabolome and proteome variability explained by the exposome - Juan Ramon Gonzalez (10 mins)
- Molecular signatures time variability in HELIX panel paired-samples - Carles Hernandez (10 mins)
- Discussion of summary statement: “achievements and challenges”

20:00 Dinner at MARITIM restaurant for those who pre-registered, Aperitivo at 19:30.

Day 2

9.00-10.45 Session 4. Assessing health effects of the early life Exposome (chair: Rémy Slama)

- **Keynote** - Systematically associating multiple exposures with child health: Methodological challenges & HELIX results – Rémy Slama (INSERM) (30 mins)

- Selection of short presentations with HELIX results
 - Exposome and cognitive and behavioural development – Léa Maitre (7 mins)
 - Exposome and allergies – Berit Granum (7 mins)
 - Exposome and lung function – Lydiane Agier (7 mins)
 - Exposome and blood pressure - Charline Warembourg (7 mins)
 - Exposome and obesity - Martine Vrijheid (7 mins)
 - Discussion (10 mins)
- Beyond bioinformatics: contributions from health informatics to exposome research – Fernando Martín-Sánchez (ISCI) (10 mins)
- Discussion of summary statement: “achievements and challenges”

10.45-11.15 Coffee

11.15-12.30 Session 5. Translation of Exposome results to policy (chair: John Wright)

- **Keynote** - Health impact assessments related to the early life exposome - David Rojas (ISGlobal) (30 mins)
- Development of Exposome App – John Wright (10 mins)
- Discussion of policy and societal implications of results (based on last slide of each presentation) – John Wright / Peter van den Hazel (20 mins)

12.30-13.30 Session 6. Networking between Exposome-related projects in and outside Europe – “building an exposome toolbox” (chair: Cathrine Thomsen)

- Short presentation on each project’s match with “exposome toolbox”: HBM4EU (Marika Kolossa), HELIX, LifeCycle (Martine Vrijheid), EXPOsOMICS, LifePath (Paolo Vineis), DynaHealth (Marjo-Riitta Jarvelin), US projects (Gary Miller, Gwen Collman), HEALS (Spyros Karakitsios)
- Project ‘Speed-date’ (Diana van Gent)
- Discussion on networking, complementarities, gaps, future ...

13.30-14.30 LUNCH – networking continued + posters

14.30-16.00 Session 7. Reflections on the Future of (early life) Exposome Research (chair: Remy Slama)

- Toxicologist's view: Thomas Hartung (Human Toxome project) (30 mins)
- Epidemiologist's view: Roel Vermeulen (IRAS) (30 mins)
- SAB statement (SAB members)
- Announcement of winner of image (“science-to-art”) competition
- Closure

Delegate list

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Posters

No	Abstract Title	Presenting Author
1	Environmental exposures and the development of asthma in children	Pippa Bird, Noortje Uphoff
2	Use of high-resolution metabolomics to identify potential metabolic pathways associated with traffic-related air pollutants	Rachel Golan
3	The early life full exposome: associations with child cardiometabolic risk and proatherogenic lipid profile	Vafeiadi M
4	The exposure to NO ₂ eliminates the short-term positive effects of physical activity on children's lung function	David Donaire-Gonzalez
5	Exposure to endocrine-disrupting chemicals and blood pressure during pregnancy	Maribel Casas
6	Exposure assessment of pregnant women to Di(2-ethylhexyl) phthalate by reverse dosimetry: Variability in repeated spot sample	Florence Zeman
7	Characterizing the cognitive and behavioral outcome in HELIX sub-cohort children - HELIX PSYCHOMETRIC DATA	Kristine Bjerve Gutzkow
8	Personal exposure of different fractions of particulate matter in children from INMA cohort in Valencia	Ferran Ballester
9	Assessing the associations between persistent organic pollutants and endometriosis: single versus multi-pollutant approaches applied to a first case-control study	German Cano-Sancho
10	Environmental Contaminants in Breast Milk in Israel	Elkana Kohn
11	Exposome research in Flemish cohorts	Sylvie Remy
12	Linkage between methylation probes and expression transcripts	Carles
13		Eliana Ein Mor
14	Urban Exposome during pregnancy and its socio-economic determinants	Oliver Robinson